## REMARKS

The Office Action mailed November 17, 2003, has been received and reviewed. Claims 1-20 are pending in the application. Claims 4-10, 12, 14, 15, 18 and 19 have been withdrawn from consideration. Claims 1-3, 13, 16-17 and 20 stand rejected. Claims 1, 2, 11, 17 and 20 have been amended, claim 13 has been canceled and claims 21 and 22 have been added. All amendments and cancellations are made without prejudice or disclaimer. Reconsideration is respectfully requested.

**Rejections under 35 USC § 102(b)**

Claims 1-3, 13 and 20

Claims 1-3, 13 and 20 stand rejected under 35 U.S.C. § 102(b) as assertedly being anticipated by Bilej *et al.* (European Cytokine Network, March-April 1994). Claim 13 has been canceled rendering the rejection thereof moot. Applicants respectfully traverse the rejections.

Bilej *et al.* cannot anticipate amended claim 1 since Bilej *et al.* does not disclose an isolated peptide which has from 13 to 60 amino acids, and which comprises SEQ ID NO: 1. Bilej *et al.* discloses a "semi-pure active fraction" of coelomic fluid, and not any isolated peptide. (*See*, Bilej *et al.*, European Cytokine Network, Abstract). The Office Action indicated that "Applicant has not defined the term 'isolated' in the instant specification. Therefore, since the coelomic fluid comprising the peptide with trypanolytic activity of Bilej et al has been purified from the *Eisenia foetida* earthworm, the peptide of the prior art meets the limitations of the claimed invention." (Office Action mailed November 17, 2003, page 3).

However, Bilej *et al.* does not disclose an **isolated** peptide. Bilej *et al.* discloses that the "coelomic fluid was fractionated and a semi-pure active fraction was used." (Bilej *et al.*, Abstract). A "semi-pure active fraction of coelomic fluid" is not an isolated peptide since the term "isolated" means that the peptide is separated from other proteins in pure form. (*See, Schering Corp. v. Geneva Pharmaceuticals, Inc.*, 2003 U.S. App. LEXIS 15496, [*21] (Fed. Cir. 2003) (stating that "a material occurring in nature in less pure form does not anticipate claims to the pure material.") (*citing In re Bergstrom*, 57 C.C.P.A. 1240, 427 F.2d 1394, 1401-02 (CCPA

1970)). In *Schering*, the court further stated that inherent anticipation may be avoided by claiming a compound in "its pure and isolated form" or as "a pharmaceutical composition." (*See*, *Id.* at [*21] – [*22]). Further, the assertion in the Office Action that the applicants have not defined the term "isolated" is moot since, as evidenced by *Schering*, the use of the term "isolated" is well known and understood by those of ordinary skill in the art. (*See*, Office Action at page 3). Thus, claim 1 cannot be anticipated.

Amended independent claim 2 is not anticipated since Bilej *et al.* does not disclose an **isolated** or **recombinant** peptide comprising the amino acid sequence of SEQ ID NO: 3 or a fragment thereof having trypanolytic activity. Rather, Bilej *et al.* discloses a fractionated, semi-pure fraction of coelomic fluid and **not an isolated or recombinant peptide**. (*See*, Bilej *et al.*, *supra*).

Claim 3 is not anticipated, at the very least, as depending from novel independent claim 1. With further regard to claim 3, it is not anticipated since Bilej *et al.* does not disclose any **isolated** peptides having trypanolytic activity.

Independent claim 20 has been amended to read on an isolated or recombinant peptide having a sequence selected from the group consisting of SEQ ID NO: 1, an amino acid sequence which has from 13 to 60 amino acids and which comprises SEQ ID NO: 1, a recombinant amino acid sequence comprising SEQ ID NO: 3, and a fragment of the recombinant amino acid sequence comprising SEQ ID NO: 3 having trypanolytic activity. Bilej *et al.* cannot anticipate amended claim 20 since Bilej *et al.* is limited to the fractionated, semi-pure fraction of coelomic fluid, and does not disclose any isolated or recombinant peptide. (*See*, *Id.*).

With further regard to the anticipation rejections of claims 1-3, and 20, the Office Action cites *In re Best* and *In re Fitzgerald* for the proposition that "since the Office does not have the facilities for examining and comparing applicant's polypeptide with the polypeptide of the prior art, the burden is on the applicant to show a novel or unobvious difference between the claimed product and the product of the prior art." (Office Action at page 2). However, *In re Best* and *In re Fitzgerald* indicate that the burden only exists when the claimed product and the product of the cited reference are identical or substantially identical. (*See*, *In re Fitzgerald*, 619 F.2d 67, 70,

205 USPQ 594, 597 (CCPA 1980); *see also*, *In re Best*, 562 F.2d 1252, 1255 195 USPQ 430, 433 (CCPA 1977)).

Since the isolated peptides of claims 1, 3 and 20, and the isolated or recombinant peptides of claims 2 and 20 are not identical to the semi-pure active fraction of the coelomic fluid of Bilej *et al.*, the applicants do not have the burden as asserted in the Office Action.

New claims 21 and 22 have been added. New claim 21 is novel since Bilej *et al.* does not disclose an isolated peptide consisting of SEQ ID NO: 1, and new claim 22 is novel since Bilej *et al.* does not disclose an isolated or recombinant peptide consisting of SEQ ID NO: 3.

Reconsideration and withdrawal of the anticipation rejections of claims 1-3 and 20 are requested.

Claims 11 and 16-17

Claims 11 and 16-17 stand rejected under 35 U.S.C. § 102(b) as assertedly being anticipated by Bilej *et al.* (Immunology Letters, 45, 1995). Applicants respectfully traverse the rejections.

Amended claim 11 is not anticipated since Bilej *et al.* does not disclose a pharmaceutical composition comprising a peptide selected from the group consisting of an **isolated** peptide which has from 13 to 60 amino acids and which comprises SEQ ID NO: 1, an **isolated or recombinant peptide** comprising SEQ ID NO: 3, a fragment of either thereof having trypanolytic activity, or an epitope of either thereof. Bilej *et al.* is limited to a semi-purified fraction of approximately 7 proteins, wherein the semi-purified fraction was obtained from fractioning fluid drawn from earthworms, and does not disclose any isolated or recombinant peptides. (*See*, Bilej *et al.*, Immunology Letters, 45, 1995, page 124 and 126). Further, since the law establishes that a protein in less pure form cannot anticipate an isolated protein, claim 11 is novel. (*See, Schering Corp. v. Geneva Pharmaceuticals Inc., supra*).

Claims 16 and 17 are not anticipated, at the very least, as depending from novel independent claim 11.

With further regard to the anticipation rejections of claims 11 and 16-17, the Office Action cites *In re Best* and *In re Fitzgerald* for the proposition that "since the Office does not have the facilities for examining and comparing applicant's pharmaceutical composition with the pharmaceutical composition of the prior art, the burden is on the applicant to show a novel or unobvious difference between the claimed product and the product of the prior art." (Office Action at page 2). However, *In re Best* and *In re Fitzgerald* indicate that the burden only exists when the claimed product and the product of the cited reference are identical or substantially identical. (*See, In re Fitzgerald, supra*; *see also, In re Best, supra*).

Since the pharmaceutical compositions of claims 11 and 16-17 are not identical to the semi-purified fraction of approximately 7 proteins of Bilej *et al.*, the applicants do not have the burden as asserted in the Office Action.

Accordingly, reconsideration and withdrawal of the anticipation rejections of claims 11 and 16-17 are requested.

**Rejections under 35 USC § 112, first paragraph**

Written Description

Claims 1 and 3 stand rejected under 35 U.S.C. § 112, first paragraph, as assertedly containing subject matter which was not described in the specification in such a way to make and/or use the invention. Applicants respectfully traverse the rejections.

Specifically, it was thought that the "Applicant has broadly described the invention as embracing any substitution, insertion or deletion change of amino acids throughout the length of the polypeptide sequence. Variants of SEQ ID NO: 1 correspond to sequences from other species, mutated sequences, allelic variants, splice variants, sequences that have a variant degree of identity (similarity, homology), and so forth." (Office Action, mailed November 17, 2003, page 5).

Amended claim 1 is directed an isolated peptide which has from 13 to 60 amino acids, and which comprises SEQ ID NO: 1. The as-filed specification describes amino acid sequences of between about 5 to 60 amino acids in length and comprising SEQ ID NO: 1 that show the

essential characteristics comparable to the whole protein. (*See*, Specification at pages 9-10 ). Thus, the as-filed specification conveys to those of ordinary skill in the art that the applicants had possession of the isolated peptide of amended claim 1.

Accordingly, reconsideration and withdrawal of the written description rejections of claims 1 and 3 are requested.

Enablement

Claims 1-3, 11, 13, 16-17 and 20 stand rejected under 35 U.S.C. § 112, first paragraph, as assertedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which is pertains to make and/or use the invention. Applicants respectfully traverse the rejections.

The Office Action indicated "the specification is only enabling for the peptides of SEQ ID NO: 1 and SEQ ID NO: 3 and which actually have trypanolytic activity. ... The specification does not disclose whether or not SEQ ID NO: 3 or fragments or epitopes thereof have cytolytic or trypanolytic activity." (Office Action at page 7). However, the as-filed specification indicates that a peptide fragment of SEQ ID NO: 3, *e.g.*, CCF-1/TIP having SEQ ID NO: 1, resulting from the tryptic digest of CCF-1, *i.e.*, SEQ ID NO: 3, was found to have trypanolytic activity. (*See*, Specification at page 17). Further, a comparison of SEQ ID NO: 1 and SEQ ID NO: 3 reveals that SEQ ID NO: 1 is amino acid residues 161 to 173 of SEQ ID NO: 3. (*See*, *Id.* at sequence listing). Thus, CCF-1/TIP is a fragment of SEQ ID NO: 3 that has trypanolytic activity, and "as long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 U.S.C. 112 is satisfied." (M.P.E.P. § 2164.01(b), *citing In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970)).

The as-filed specification further discloses that an isolated peptide may have up to 60 amino acids and that the full length CCF-1 has trypanolytic activity. (*See*, *Id.* at pages 9-10 and 16). Thus, since the full length CCF-1 (about 384 amino acids) includes the sequence of CCF-1/TIP (SEQ ID NO: 1), which was shown to have trypanolytic activity, a peptide which has up to

60 amino acids and comprising SEQ ID NO: 1 would also have trypanolytic activity. Accordingly, amended claim 1 directed to an isolated peptide which has from 13 to 60 amino acids, and which comprises SEQ ID NO: 1 is enabled. (*See*, *Id.* at page 17 and Sequence Listing).

Amended claim 2 directed to an isolated or recombinant peptide comprising the amino acid sequence of SEQ ID NO: 3 or a fragment thereof having trypanolytic activity is also enabled. The as-filed specification indicates that CCF-1/TIP, a fragment of SEQ ID NO: 3, has trypanolytic activity. (*See*, *Id.*). The as-filed specification further indicates a recombinant peptide, *e.g.*, rCCF-1, has trypanolytic activity. (*See*, *Id.* at page 21). Thus, one of ordinary skill in the art would be able to make and use the isolated or recombinant peptide of claim 2 without undue experimentation.

Claim 11 is directed to a pharmaceutical composition comprising a peptide selected from the group consisting of an isolated peptide which has from 13 to 60 amino acids and which comprises SEQ ID NO: 1, an isolated or recombinant peptide comprising SEQ ID NO: 3, a fragment of either thereof having trypanolytic activity, and an epitope of either thereof. The as-filed specification is enabling for an isolated peptide which has from 13 to 60 amino acids and which comprises SEQ ID NO: 1 (*See*, *Id.* at pages 9-10, 16 and 17) and an isolated or recombinant peptide comprising SEQ ID NO: 3 or a fragment of either thereof having trypanolytic activity (*See*, *Id.* at pages 9-10 and 17). The specification further enables an epitope of the isolated peptide which has from 13 to 60 amino acids and which comprises SEQ ID NO: 1 and the isolated or recombinant peptide comprising SEQ ID NO: 3 (*See*, *Id.* at pages 9 and 11), and support enabling the pharmaceutical composition is found, *inter alia*, at pages 4 and 23 of the as-filed specification. (*See*, *Id.* at pages 4 and 23).

Support for amended claim 20 is found as follows: an isolated or recombinant peptide having a sequence selected from the group consisting of SEQ ID NO: 1 (*See*, *Id.* at page 17), an amino acid sequence which has from 13 to 60 amino acids and which comprises SEQ ID NO: 1 (*See*, *Id.* at page 17 and Sequence Listing), a recombinant amino acid sequence comprising SEQ ID NO: 3, and a fragment of the recombinant amino acid sequence comprising SEQ ID NO: 3

having trypanolytic activity (*See, Id.* at pages 9 and 11). Accordingly, one of ordinary skill in the art would be able to make or use the isolated or recombinant peptide of claim 20 without undue experimentation.

Reconsideration and withdrawal of the enablement rejections of claims 1-3, 11, 13, 16-17 and 20 are, thus, requested.

**Rejection under 35 USC § 112, second paragraph**

Claim 2 stands rejected under 35 U.S.C. § 112, second paragraph, as assertedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Applicants respectfully traverse the rejection at least partially in view of the amendment to claim 2.

It was thought that the phrase "functional fragment" was unclear. Although applicants do not agree that the phrase is unclear, to expedite prosecution, the term "functional" has been removed from claim 2. The term "fragment" is defined in the as-filed specification at page 9 and, thus, claim 2 would be definite to one of ordinary skill in the art.

Reconsideration and withdrawal of the indefiniteness rejection of claim 2 is requested.

## CONCLUSION

In view of the foregoing amendments and remarks, the claims are believed to be in condition for allowance and an early notice thereof respectfully is solicited. Should the Office determine that additional issues remain which might be resolved by a telephone conference, the Office respectfully is invited to contact applicant's attorney at the address or telephone number given herein.

Respectfully submitted,

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